



## TEAM BASED LEARNING: ESSENTIAL ASPECTS FOR STUDENTS IN A NUTSHELL- A MUST KNOW

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### ABSTRACT

Team-based learning (TBL) is an instructional strategy developed in the business school environment in the early 1990s by Larry K. Michaelsen, Professor of Management and Business Communication, University of Oklahoma, who wanted the benefits of small group learning within large classes. Team-based learning is a form of cooperative learning. TBL, an approach first developed to facilitate active learning in large undergraduate classes, but which has subsequently proven to be effective in a wide range of instructional settings. TBL has also been shown to reduce faculty burnout by promoting increased student responsibility, engagement in the learning process, and increased opportunities for positive teacher-student interactions. A key feature is multiple-choice questions that students take individually and then re-take as a team. TBL is very different from teaching methods in that there is no need for many faculty or rooms as in case of problem based learning (PBL), students must come prepared to sessions and individual and small groups of students (teams) are highly accountable for their contributions to team productivity. TBL is one of the teaching methods where teacher becomes guide on the side and effective implementation depends on teachers for its success. Also to be noted that TBL gives equal opportunity to high performers and low performers to interact and improve upon.

**KEY WORDS:** Team Based Learning, Students, Teaching methods, Learning process.

### INTRODUCTION:

There are various methods of teaching to students and all are aimed at making student to understand the concepts. But in reality is this achieved with traditional methods, the answer is No. All the professionals require a common set of abilities to meet the needs of their outcomes in any course.

### What is Team Based Learning (TBL):

Parmelee and colleagues defined team-based learning (TBL) as “an active learning and small group instructional strategy that provides students with opportunities to apply conceptual knowledge through a sequence of activities that includes individual work, team work, and immediate feedback.” (1)

Team-based learning (TBL) possibly relies on small group interaction more heavily than any other commonly used instructional strategy in postsecondary education.

The primary learning objective in TBL is give an opportunity to practice using course concepts to solve problems which may be faced in real life scenarios.

### Who introduced TBL:

Larry K. Michaelsen, Professor of Management and Business Communication, University of Oklahoma, in 1979, found that his class size had been tripled from 40 to 120 students. He had been using a case-based teaching approach that involves facilitating problem solving discussions - an approach that is very close to the structure that TBL classrooms use today. (2)

Since its beginning, TBL has been used successfully in various professional disciplines, including business, law, engineering, medicine, and nursing.

### How is TBL different from other teaching methods?

Team Based Learning is a structured form of small-group learning that emphasizes student preparation out of classroom and application of knowledge in the classroom. Students are organized strategically into diverse teams of 5-7 students that work together throughout the class and can be used for large class strength also.(3)

Team-based learning is a form of cooperative learning that creates an environment that allows learners to develop higher levels of learning (ie, application, analysis, evaluation, creativity). To accomplish these goals, the teacher must follow the 4 essential principles of TBL: (4)

- Properly form and maintain groups i.e. they are permanent throughout the course (5)
- Hold students accountable for individual and team work. (6)
- Provide frequent and timely feedback. (7)
- Design team assignments to promote learning and team development.

Haidet et al published guidelines to assist instructors who are implementing TBL and describing it in the literature. This publication also identifies 7 core elements

of TBL that should be incorporated into published reports on TBL implementation to ensure appropriate comparisons among results. The 7 core elements include: team formation, readiness assurance, immediate feedback, sequencing of in-class problem solving, the 4 “S” structure in developing team application exercises (significant problem, same problem, specific answer choice, simultaneous reporting), incentive structure, and peer evaluation.(8)

### Purpose of TBL:

The purpose of TBL is to enhance student engagement and the quality of student learning. The benefits of TBL comprises of improving class-attendance, augment pre-class homework, enhanced academic performance, and the expansion of social and group expertise, “in class sizes ranging from 10 to 400-plus, with courses in hundreds of academic disciplines and students ranging from freshmen on academic probation to doctoral level students”.(9)

### Process of TBL:

**Team formation:** TBL requires that the instructor oversee the formation of the groups so that he or she can manage three important variables: ensuring that the groups have adequate resources to draw from in completing their assignments and approximately the same level of those resources across groups, avoiding membership coalitions that are likely to interfere with the development of group cohesiveness, and ensuring that groups have the opportunity to develop into learning teams. Each group should contain a mix of student characteristics that might make the course easier or more difficult for a student to do well in the course as well as demographic characteristics like gender and ethnicity.

**Example:** A group can be formed based on the performance in their previous examinations. Make group with high performer, Low performer, male and female, ethnicity etc.

In addition, although member diversity initially inhibits both group processes and performance, it is likely to become an asset when members have worked together over time and under conditions that promote group cohesiveness. (10)

Outline of TBL process is shown in the below figure 1.

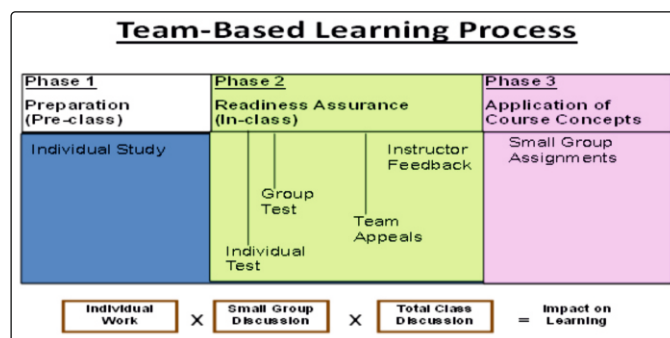


Figure 1: Showing the outline of TBL process.

**Student Accountability for Individual and Group Work:**

In lecture classes, there is no need for students to be accountable to anyone other than the instructor. By contrast, TBL requires students to be accountable to both the instructor and their teammates for the quality and quantity of their individual work. Furthermore, teams must be accountable for the quality and quantity of their work as a unit. (11)

In tRAT the team will work together to solve the questions, then each member should participate to solve the problem. Any member not participating will affect the team performance and thereby the student will be accountable to team.

**Frequent Immediate Student Feedback:**

Immediate feedback is the primary instructional lever in TBL for two very different reasons. First, feedback is essential to content learning and retention (12) second, immediate feedback has tremendous impact on group development. (13)

This will make student to understand the concepts clearly and he or she can discuss with the group as well as the teacher during the discussion sessions if the concepts were not clear.

**Assignments that Promote Both Learning and Team Development:**

The most fundamental aspect of designing team assignments that promote both learning and team development is ensuring that they truly require group interaction. In most cases, team assignments generate a high level of interaction if they require teams to use course concepts to make decisions that involve a complex set of issues and enable teams to report their decisions in a simple form.

**Readiness assurance process:**

Each unit of a TBL course begins with a readiness assurance process (RAP), which occurs at least five to seven times each term. The RAP provides the foundation for individual and team accountability and has five major components: (1) assigned readings, (2) individual tests, (iRAT- Individual readiness assurance test) (3) team tests, (tRAT-team readiness assurance test) (4) an appeals process, during TBL session and (5) Instructor feedback.

**Assigned Readings:**

A particular topic selected by the faculty and reading materials will be given to students well in advance and students prepare outside the classroom.

**iRAT- Individual readiness assurance test:**

On the day of TBL the students will be asked to take multiple choice questions (MCQ's) test individually in single classroom around 10 questions can be given related to assigned topics and faculty will invigilate the session. This process make the student to have individual accountability for his/her reading.

**tRAT- team readiness assurance test:**

Here the students will be asked to form teams which are pre-designed by the faculty based on certain criteria's as discussed above. The team will solve the same questions which were answered in iRAT as team. But before they answer the teams must reach agreement on the answers to each test question. They then immediately check the correctness of their decision using the intermediate feedback assessment technique (IF-AT), a self-scoring answer sheet that provides feedback on each team decision. Immediate feedback is the most effective tool available promoting both concept understanding and cohesiveness in learning teams. (Figure 2)

Figure 2

**IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF-AT)**

Name TEAM #1 Test # 1

Subject \_\_\_\_\_ Total 34

**SCRATCH OFF COVERING TO EXPOSE ANSWER**

	A	B	C	D	Score
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4
2.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
3.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0

Figure 2

**Appeals Process:**

Gives the opportunity to students refer to their assigned reading material and appeal any questions missed on the group test or any questions which is misleading or any questions which may have more than two answers. This process makes every group to be more alert and have proper discussion before they come to decision on the right answer.

**Application exercise:**

In this session the faculty has prepared problem based questions around 5 MCQ's (Level 3 questions) which are different from iRAT questions. But these questions are pertaining to reading material given to students. The questions will be discussed with the groups for right answers which will make them achieve higher

order skills.

**Note:** Level 1 Questions- Knowledge/ Recall type

Level 2 questions: Comprehension type

Level 3 questions: Problem based/application questions

**Instructor Feedback:**

Feedback comes immediately after the appeals process and allows the instructor to clear up any confusion students may have about any of the concepts presented in the readings. As a result, input from the instructor is typically limited to a brief, focused review of only the most challenging aspects of the pre class reading assignment. It should be remembered feedback should not become lecture but can be mini interactive session.

**Advantages of TBL to students:**

- Promotes higher level of learning.
- With TBL, team work is central to exposing students to and improving their ability to apply course content.
- With TBL, the vast majority of class time is used for team work.
- Courses taught with TBL typically involve multiple group assignments that are designed to improve learning and promote the development of self managed learning teams.
- TBL has more education achievement and student satisfaction.
- TBL has been reported to improve student performance and increased student engagement and satisfaction.
- Studies have shown that TBL equally effective active learning approaches especially helpful among low academic performers and high performer.
- TBL is an effective instructional system for large groups of students and ensures learning theories of pedagogy.
- Large group of students can be handled in one lecture hall and by one teacher.
- Teacher will act as guide on the side.
- Promotes increased student responsibility, engagement in the learning process, and increased opportunities for positive teacher-student interactions.

Differences between TBL and other methods Table excerpted from Baylor College of Medicine, Team Learning in Medical Education, September 2002 .

	Lecture	Problem-Based Learning	Team-Based Learning
<b>Key points</b>	Instructor provides content for student note-taking in a hall	Student-directed learning in solving real world problems in small groups	Instructor-directed content applied to real world problems by student teams in a lecture hall
<b>Teaching Methods</b>	Lecturer didactically provides content	Facilitators give cases and students analyze facts to solve case	Students prepare content before class. In class, they apply it in teams to solve problems
<b>Outcomes</b>	Content acquisition and conceptual understanding	Problem-solving abilities, critical reasoning, content acquisition, understanding, effective communication and small group interaction	Content acquisition, understanding, content application to solve problems, critical reasoning, effective communication, collaborative team work
<b>Instructor's role</b>	Identifies learning objectives, prepares presentations and answers student questions	Facilitates small group discussions and gives students feedback and guidance as needed	Identifies learning objectives and content, prepares readiness tests, answers student questions and prepares application assignments for team work
<b>Student's role</b>	Attend lecture, study notes, prepare for exam	Identify learning issues, do independent out of class research, join group discussions	Do independent out-of-class study, join team discussions, defend team solutions to class

**SUMMARY:**

**For successful TBL quick recollect:**

**Groups Must Be Properly Formed and Managed**

- The goal is to create functional teams
- Faculty should select the teams
- Heterogeneous selection
- Size of team 5-7 students in each team
- Team permanence

**Students Must be Made Accountable**

1. Pre-Readings
2. Readiness Assurance: Individual and Team
3. Appeals
4. Mini-lecture

**Team Activity Must Promote Both Learning and Team Development**

1. Significant Problems: Teams work on a relevant, significant problem.
2. Same Problem: Teams work on the same problem.
3. Specific Choice: Teams required to make a specific choice.
4. Simultaneous Report: Teams report simultaneously.

**Students Must Receive Frequent and Immediate Feedback**

Using Immediate Feedback Assessment Technique (IF-AT) forms.

**CONCLUSION:**

Many students think that TBL is an examination rather than a teaching method. This misunderstanding should be cleared from students mind. Remember TBL was started to make students self learners, able to understand the concepts, build team cooperation, work as a team, be competitive and become lifelong learners.

TBL is one of the teaching methods where teacher becomes guide on the side and effective implementation depends on teachers for its success. Also to be noted that TBL gives equal opportunity to high performers and low performers to interact and improve upon.

TBL is conducted with small groups of 5-7 and teacher can actively look the student's participation in discussion.

Always remember if teacher teaches you, students try to remember only for the purpose of examination. But when student learns by participating in activity supported by his team mates he will become lifelong learner be it in any field.

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